Tip: Prompt magic

Enhancing the system prompt

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As Linux/UNIX people, we spend a lot of time working in the shell, and in many cases, this is wh

```
bash-2.04$
```

If you happen to be root, you're entitled to the "prestige" version of this beautiful prompt:

```
bash-2.04#
```

These prompts are not exactly pretty. It's no wonder that several Linux distributions have upgra
add color and additional information to boot. However, even if you happen to have a modern dis
nice, colorful prompt, it may not be perfect. Maybe you'd like to add or change some colors, or a
from the prompt itself. It isn't hard to design your own colorized, tricked-out prompt from scrat

Prompt basics

Under bash, you can set your prompt by changing the value of the PS1 environment variable, as

```
$ export PS1="> "
```

Changes take effect immediately, and can be made permanent by placing the "export" definitio
contain any amount of plain text that you'd like:

```
$ export PS1="This is my super prompt > "
This is my super prompt >
```

While this is, um, interesting, it's not exactly useful to have a prompt that contains lots of static
contain information like the current username, working directory, or hostname. These tidbits of
navigate in your shell universe. For example, the following prompt will display your username a

```
$ export PS1="\u@\H > "
drobbins@freebox >
```

This prompt is especially handy for people who log in to various machines under various, differe
acts as a reminder of what machine you're actually on and what privileges you currently have.

In the above example, we told bash to insert the username and hostname into the prompt by u
character sequences that bash replaces with specific values when they appear in the PS1 varia
"\u" (for username) and "\H" (for the first part of the hostname). Here's a complete list of all spe
recognizes (you can find this list in the bash man page, in the "PROMPTING" section):

Sequence	Description
\a	The ASCII bell character (you can also type \007)
\d	Date in "Wed Sep 06" format
\e	ASCII escape character (you can also type \033)
\h	First part of hostname (such as "mybox")
\H	Full hostname (such as "mybox.mydomain.com")
\j	The number of processes you've suspended in this shell by hitting ^Z

\l	The name of the shell's terminal device (such as "ttyp4")
\n	Newline
\r	Carriage return
\s	The name of the shell executable (such as "bash")
\t	Time in 24-hour format (such as "23:01:01")
\T	Time in 12-hour format (such as "11:01:01")
\@	Time in 12-hour format with am/pm
\u	Your username
\v	Version of bash (such as 2.04)
\V	Bash version, including patchlevel
\w	Current working directory (such as "/home/drobbins")
\W	The "basename" of the current working directory (such as "drobbins")
\!	Current command's position in the history buffer
\#	Command number (this will count up at each prompt, as long as you type som
\$	If you are not root, inserts a "$"; if you are root, you get a "#"
\xxx	Inserts an ASCII character based on three-digit number xxx (replace unused c "\007")
\\	A backslash

\[	This sequence should appear before a sequence of characters that don't move sequences). This allows bash to calculate word wrapping correctly.
\]	This sequence should appear after a sequence of non-printing characters.

So, there you have all of bash's special backslashed escape sequences. Play around with them they work. After you've done a little testing, it's time to add some color.

Colorization

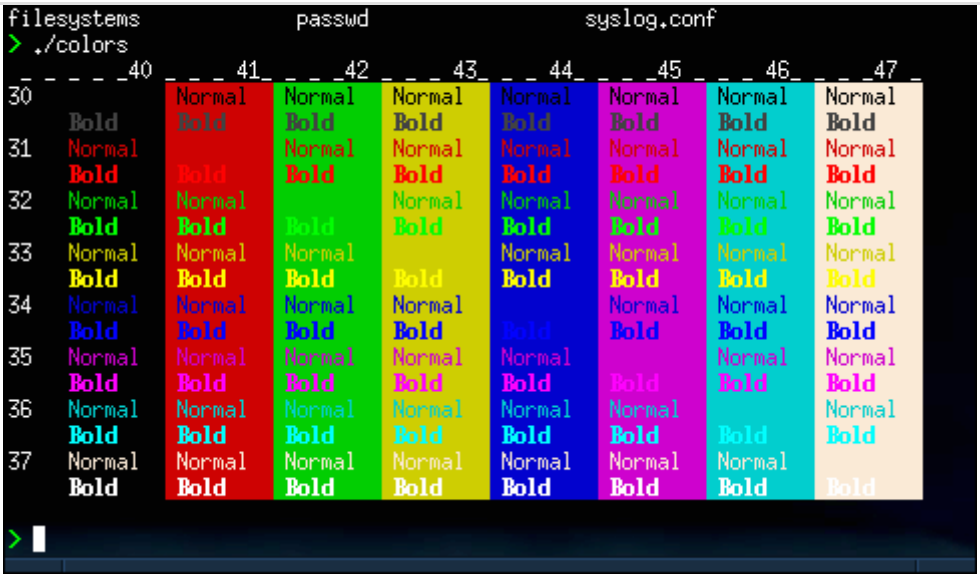
Adding color is quite easy; the first step is to design a prompt without color. Then, all we need t sequences that'll be recognized by the terminal (rather than bash) and cause it to display certai Standard Linux terminals and X terminals allow you to set the foreground (text) color and the ba enable "bold" characters if so desired. We get eight colors to choose from.

Colors are selected by adding special sequences to PS1 -- basically sandwiching numeric value open-bracket) and an "m". If we specify more than one numeric code, we separate each code w example color code:

```
1  "\e[0m"
```

When we specify a zero as a numeric code, it tells the terminal to reset foreground, backgroun default values. You'll want to use this code at the end of your prompt, so that the text that you t let's take a look at the color codes. Check out this screenshot:

Color chart



To use this chart, find the color you'd like to use, and find the corresponding foreground (30-37 numbers. For example, if you like green on a normal black background, the numbers are 32 anc definition and add the appropriate color codes. This:

```
1 export PS1="\w> "
```

becomes:

```
1 export PS1="\e[32;40m\w> "
```

So far, so good, but it's not perfect yet. After bash prints the working directory, we need to set t "\e[0m" sequence:

```
1 export PS1="\e[32;40m\w> \e[0m"
```

This definition will give you a nice, green prompt, but we still need to add a few finishing touche background color setting of 40, since that sets the background to black which is the default col is quite dim; we can fix this by adding a "1" color code, which enables brighter, bold text. In adc surround all non-printing characters with special bash escape sequences, "\[" and "\]". These s enclosed characters don't take up any space on the line, which will allow word-wrapping to con them, you'll end up with a nice-looking prompt that will mess up the screen if you happen to ty approaches the extreme right of the terminal. Here's our final prompt:

Don't be afraid to use several colors in the same prompt, like so:

```
export PS1="\[\e[36;1m\]\u@\[\e[32;1m\]\H> \[\e[0m\]"
```

Xterm fun

I've shown you how to add information and color to your prompt, but you can do even more. It's to your prompt that will cause the title bar of your X terminal (such as rxvt or aterm) to be dyna to do is add the following sequence to your PS1 prompt:

```
"\e]2;titlebar\a"
```

Simply replace the substring "titlebar" with the text that you'd like to have appear in your xterm You don't need to use static text; you can also insert bash escape sequences into your titlebar. places the username, hostname, and current working directory in the titlebar, as well as definin

```
export PS1="\[\e]2;\u@\H \w\a\e[32;1m\]>\[\e[0m\] "
```

This is the particular prompt that I'm using in the colortable screenshot, above. I love this prom information in the title bar rather than in the terminal where it limits how much can fit on a line. surround your titlebar sequence with "\[" and "\]", since as far as the terminal is concerned, this problem with putting lots of information in the title bar is that you will not be able to see info if terminal, such as the system console. To fix this, you may want to add something like this to yo

```
if [ "$TERM" = "linux" ]
then
    #we're on the system console or maybe telnetting in
    export PS1="\[\e[32;1m\]\u@\H > \[\e[0m\]"
else
    #we're not on the console, assume an xterm
    export PS1="\[\e]2;\u@\H \w\a\e[32;1m\]>\[\e[0m\] "
fi
```

This bash conditional statement will dynamically set your prompt based on your current termin you'll want to configure your ~/.bash_profile so that it sources your ~/.bashrc on startup. Make

```
source ~/.bashrc
```

This way, you'll get the same prompt setting whether you start a login or non-login shell.

Well, there you have it. Now, have some fun and whip up some nifty colorized prompts!

Downloadable resources

PDF of this content

Related topics

- rxvt is a great little xterm that happens to have a good amount of documentation related to the "doc" directory included in the source tarball.
- aterm is another terminal program, based on rxvt. It supports several nice visual features, li
- bashish is a theme engine for all different kinds of terminals.

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